GPrix
Good Practices in Innovation Support Measures for SMEs

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Consortium:

Del. 1.2 - SWOT analysis and SME profiling of North Brabant (Netherlands)

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PP	Restricted to other programme participants (including the Commission Services)	
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CO	Confidential, only for members of the consortium (including the Commission Services)	

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1 Executive Summary

1.1 Objective of the deliverable

The objective of this deliverable is to report on the regional economic fabric of the 7 regions. The report uses a common template for the 7 regions so each partner can develop regional reports with the same structure and information, including a detailed SWOT analysis. This first report on the targeted regions will provide a baseline to support the development of the following reports on the regions later on:

- A contextual analysis of regional innovation policies and strategies in terms of Innovation-led growth paths (Deliverable 1.5).
- List of selected measures for good practice case studies (Deliverable 1.6)
- An inventory of R&D&I support measures and an impact analysis on regional SMEs, using primary and secondary data (Deliverable 1.7).
- Innovation pathways of SMEs in traditional sectors (Deliverable 1.8)

These reports will be complemented by a global analysis at EU level of R&D&I support measures and their impact on the transition of regions from traditional to knowledge based economies on WP2.

Resulting from this research study, a set of recommendations regarding more efficient R&D&I measures will be produced and validated at European level, while the participating regions will serve as a test bed for their implementation by including them in the Local Action Plans to be developed and implemented by the UNIC project.

1.2 Identifying a "traditional sector"

Our concern is with "traditional manufacturing sectors". We do not define "traditional" only - or even mainly - according to the standard OECD classification of industries as "high", "medium" or "low-tech".1 This approach does not capture the complexities of traditional industries nor does it show the dynamic nature of the firms. For instance, some traditional industries may be low-tech but others are not (e.g., automotive). Indeed, once we define industry at a level meaningful to practitioners - say, at the SIC 4-digit level - characterization of whole industrial sectors as "high", "medium" or "low-tech" may be misleading.

For example, pottery/ceramic products in SIC 262 includes sectors that may operate at different levels of R&D intensity (e.g., SIC 2621 – manufacture of ceramic household and ornamental articles - and SIC 2624 – manufacture of technical ceramics).2 Moreover, even

[1] These categories are defined by research and development 'intensities' – that is, OECD average shares of research and development expenditure in sales revenue – of, respectively, more than 10 per cent, between 0.9 and 10 per cent, and less than 0.9 per cent.

[2] In the British Standard Industrial Classification (SIC), which follows the same classification principles as the EU NACE classification, the principal pottery/ceramic products in SIC 262 comprise SIC 2621 – manufacture of ceramic household and ornamental articles, including table ware, kitchen ware, ornamental articles and toilet articles (excluding large sanitary fixtures); SIC 2622 – manufacture of ceramic sanitary fixtures; SIC 2623 and 2624 – manufacture of technical ceramics; and SIC 2626 –

the same 4-digit industry may include substantially different intensities with respect to R&D and other types of innovation activity (e.g., commodity earthenware producers and specialists in hotel ware).

Our preferred approach to defining "traditional industry" is multi-dimensional, reflecting not only measurable characteristics but also a range of concerns or anxieties.

We define as "traditional" those manufacturing industries with at least the majority of the following characteristics.

Long established. Traditional implies history. One interpretation would be that the industry should have been established at least during the inter-war years (1918-1939) if not before. This is sufficiently broad to include, say, the motor industry but to exclude, say, computing. Most of the industries in which we are interested have been established for much longer, such as leather.

Strictly speaking, age is both a necessary and sufficient condition for an industry to be classed as "traditional", which suggests the major theme of longstanding processes or products. However, we are also interested in industries with at least some of the following characteristics:

Once a - even the - main source of employment at the sub-regional level (possibly even the regional level in certain cases).

In the mature or declining phase of the industry life-cycle, with recent decline typically associated with globalisation. Because these industries are long established, knowledge has diffused and enabled production to develop in and/or be relocated to new locations with lower costs. This applies to at least some of our industries (e.g., ceramics) although not necessarily to all (maybe food processing?).

Labour intensive, so that relocation of production to low-wage economies has particularly serious consequences for manual employment in the (sub) regional context. Of course not all aspects of production may be out-sourced to low-wage economies such as design and marketing. However, a key element of the traditional nature of the industries is that some or most of the repetitive, low-skilled, manual work is indeed out-sourced from EU countries.

Major sources of wealth creation and employment in regional (or, at least, sub-regional) economies. In spite of recent decline, the traditional industries in which we are interested continue to be important to regional or, at least, sub-regional economies.

Retain capacity for innovation, hence the potential to continue as important sources of wealth creation and employment. This issue can be linked to the core competencies where firms will retain what can add value (make strategy) and out-source what the market can produce more cheaply and/or efficiently (buy strategy). Conversely, traditional industries may be ones in which "conditions of low

manufacture of refractory ceramic products (CSO, 1993). Related industries, but outside SIC 262, include the manufacture of ceramic tiles and flags (SIC 2630) as well as bricks, tiles, and construction products (SIC 2640).

technological opportunities limit innovative entry and restrict the innovative growth of successful established firms" (Breschi et al., 2000, p.393).

Recent and often dramatic decline is why we are especially concerned with traditional industries because traditional industries often remain important sources of wealth creation and employment in regional (or, at least, sub-regional) economies they are of concern to public policy; and capacity for innovation is likely to be both a feature of any industry that survives long enough to be classified as traditional and a necessary condition for a positive return on public sector support for these industries.

This potential for innovation may be more associated with particular industry groups (at the NACE/SIC 3-digit and/or 4-digit levels) firms than with the industry as a whole and, possibly, with SMEs rather than with larger and established industry leaders. Accordingly, we should also be careful to distinguish high-tech and dynamic industries or even firms within broadly defined traditional sectors.

Evidence of significant capacity to diversify from within a traditional industry towards new, high-growth activities: i.e., the possibility of high-tech and dynamic industry groups emerging within broadly defined traditional sectors. Sectors defined at the NACE/SIC 2-, 3- or even 4-digit level may be sufficiently heterogeneous to give rise to industry groups able to diversify into new technologies and products.

An example is the textile industry that as well as the "rag trade" has also witnessed the growth of technical textiles. The general point is to note significant diversification from within traditional industries towards new, high-growth activities.

Additional characteristics, although not necessary conditions, of traditional manufacturing industries might also be:

Substantial contribution to regional (or, at least, sub-regional) **exports**, even if the industry has recorded a deteriorating trade balance as part of overall decline associated with growing competition from imports.

Geographically concentrated; traditional industries may or may not be geographically concentrated and so constitute a "cluster". This characteristic can vary between industries where economies of agglomeration are useful for some industries, such as ceramics, but not others.

2 North Brabant

2.1 Economic Context of the Region

The province of North Brabant covers 5,000 square kilometres (2,000 square miles), and accounts for 14.8% (2.4 million) of the total Dutch population. Den Bosch is the capital of North-Brabant; other major urban regions are Eindhoven, Helmond, Tilburg and Breda.

North Brabant has a geographically strategic location in the southern part of the Netherlands. The province is surrounded by five large urban areas that dominate the spatial structure of North-West Europe, including:

- Randstad (comprising Amsterdam, Utrecht, Rotterdam and The Hague)
- Antwerp/Brussels/Ghent region
- Rhine/Ruhr area
- Greater London
- Ile de France (the greater Paris region)

Economy

The economic structure of North-West Europe is supported by important transport routes, corridors - from these main ports to the densely populated urban and industrial areas in this area, offering access to 400 million consumers in the European Union.

The economy of the North Brabant region is characterised by a robust industrial component. The ICT sector is among the leaders with around 4,180 companies employing over 29,000 people in the production and distribution of components, sales and marketing and services. The electronics sector amounts to around 940 companies involved in the production and

distribution in such areas as household products, office machines and medical equipment, employing almost 34,000 people.

According to BOM, the North Brabant Development Agency, almost one third of all Dutch research and development expenditure takes place in the province of North Brabant. Private companies in co-operation with the Technical University of Eindhoven (TUE) and the Agricultural University of Wageningen undertake the majority of this. Projects include automotive, information and communication technologies, multimedia, medical technology and biotechnology. In all, almost 11,500 people work in the R&D sector making the region one of the most R&D intensive regions of the Netherlands. Much of the R&D activity is centred around Philips Electronics.

The regions geographic location naturally lends itself to the handling and transport of goods and the logistics sector, including forwarding, storage, etc. employs over 42,000 people among around 3,445 companies. The chemicals sector is also well represented with some 545 companies employing in the region of 24,000 people.

The medical technologies, automotive, food processing and call centre sectors amount to around 2,130 companies accounting for over 74,000 employees. With over 900 companies employing over 30,000 people North Brabant is a major food processing region in the Netherlands accounting for over 30 per cent of the added value of the Netherlands food and food processing industry. The scope of the industry in the region includes confectionery, vegetable processing, meat processing, dairy, poultry, snack foods and animal feeds. Brewing is also a major industry in the region. A strong support industry has also grown around the food processing industry. This includes the provision of machinery, packaging and specialised logistics support. Den Bosch is the centre of the business support infrastructure which is also the centre for research and development in the sector. This includes the HAS Knowledge Transfer Centre which researches new technologies and support infrastructure.

North-Brabant accommodates 1,100 foreign companies, employing 80,000 highly qualified and motivated workers. Multinationals in the area include: Abbott Laboratories, Acer, Alcoa, Amgen, AKZO-Nobel, ASM Lithography, BENQ, Bosch, Coca-Cola, DAF Trucks Paccar, Dell, Ericsson, Exxon Mobil, FEI Company, Fuji Photo Film, General Electric, IBM, Johnson & Johnson, Haier, Heineken, Hitachi, IFF, Ingram Micro, LG, Mars, Philips Electronics, Philip Morris, Ricoh, Sabic, SAP, Samsung Electronics, Siemens, Shell, Sony, Tyco Electronics, UPS and Unilever. An impressive number of these companies are listed in the top 100 of the FT 500 world's largest companies.

The innovative and high-tech nature of these international companies characterizes North-Brabant. In particular, food & beverage, luxury goods, electrical engineering, medical technology, chemicals, and various metal industries have put their stamp on the area. This industrial diversity has greatly boosted distribution, transport and services. Other strong sectors of the economy include the information and communication technology and subcontracting activities for the automotive industry.

High levels of knowledge and technology are needed to generate economic growth and ensure a high standard of living. As product life cycles and fashion periods have shortened, the importance of innovation is growing. Rapid adoption of new technologies is continuously pushing up the levels of education. Existing knowledge becomes obsolete much more rapidly. Research & Development, therefore, are critical factors to keep up with these developments and stay ahead of competition. The province of North-Brabant ranks first among regional R&D expenditure, with a share of > 30% of national R&D expenditure. The level of R&D

spending in approaches 3% of GRP, which is well above the national average and that of the European Union.

With a Gross Regional Domestic Product of €80 billion the Province of North Brabant is responsible for 15% of Dutch GDP. GDP per inhabitant of the region is on the Dutch average, which is above EU27 average, but below leading regions in Europe. When differences in 'purchasing power' are taken into consideration, GDP per capita and growth in GDP per capita is similar to EU27 as a whole. Within the province, intra-regional differences in GDP/inhabitant are small. Annual growth rate of regional GDP was with 4.0% in the period 2000-2008 a little bit below Dutch average (4.5%). The annual growth rates for the region differ more over the years than the national growth rates, which show that compared to the rest of the Netherlands the economy of Brabant is rather cyclical sensitive. The economy of Brabant was indeed hit harder than the rest of the Netherlands by dotcom and recent credit-crunch crisis, but recovered more speedily as well.

The unemployment rate in 2008 was 2.3 in North Brabant, 2.8 for the Netherlands and 7 percent for the EU27. These differences in the unemployment rate have been rather stable: between 2000 and 2008 the regional rate was on average 0.5 percentage-point below the national and 5.5 percentage-point below the EU27 unemployment rate.

Labour productivity in terms of GDP per economically active population was in both 2000 and 2006 similar to that of the Netherlands as a whole (63.000 Euro in 2006), and 26 percent higher than the EU27 average (50.000 Euro in 2006).

The more cyclical trend is due to the historically developed economic structure, since manufacturing industry (including the building sector) is with 23 percent of employment relatively large in Brabant as compared to the Netherlands as a whole (18%). (However, it is way below the 29 percent for the EU27 as a whole). The share of the business services sector in employment is with 14 percent, slightly below the National share of 16 percent. Other market-services including trading and wholesale represent 24 percent of employment for both the region and the country, which is similar to the 25 percent for the EU as a whole. Mainly the public administration and services sector in North Brabant is with 30 percent of employment relatively small compared to the 34 percent for the Netherlands as a whole. The shifts in the sector structure after 2000 has been similar for the region and the country, e.g. regarding 'de-industrialisation' and the growth of the 'public sector'.

Leading business sectors that have been identified as part of the national 'Peaks in the Delta' initiative to support regional strengths are (between brackets the % of employment): Process Industry (10.2%), High tech Systems (1.7%), Medical Systems and Life Sciences (3.4%), Maintenance (0.2%), Logistics and Distribution (4.1%), Food & Nutrition (0.7%) and Tourism (0.4%).

Infrastructure

North Brabant enjoys a strategically central location. A number of major world ports, international airports and major European cities are within easy reach. The region's proximity to the main transport corridors from the main North-Western European ports to the south and east has contributed to significant foreign investment. An extensive infrastructure of motorways, railways and waterways provides connections to international links. Mainports that are located in this area include the seaports of Rotterdam, Antwerp and Amsterdam and the airports of London, Paris, Frankfurt, Amsterdam, Brussels and Düsseldorf.

Eindhoven airport provides access to all the major European cities. The emphasis is on a high volume of direct services to destinations including daily services to Amsterdam, Rotterdam, London Heathrow, Birmingham, Manchester, London Stansted, Hamburg and Paris. Passenger throughput is in the region of 337,000 and almost 22,000 tonnes of cargo is handled annually.

The region's rail network provides frequent connections to other parts of The Netherlands and the surrounding countries of Belgium, France and Germany and all larger cities are serviced by freight carriers.

Brabant has its own seaport at Moerdijk, located on the Hollandsch Diep. It is the Netherlands' farthermost inland seaport less than a four hour sail from the North Sea. Situated on the hub of the large European inland shipping courses including the Rhine, the Meuse and Scheldt, the major ports of Rotterdam and Antwerp are within easy reach. Virtually every inland destination in the European hinterland can be accessed from Moerdijk.

In totals of loading and unloading of road cargo, North Brabant ranks second among all provinces in the Netherlands. Almost 17 per cent of the Netherlands' 1,500 transportation companies are based in the region. Thanks to a combination of specialised logistics companies, which provide services for specific sectors such as medical technology, electronics, and food processing and the regions geographic location, more than 700 multinationals have chosen the Netherlands as their central European distribution hub.

Workforce

In a total workforce of a little over 1 million, some 641,000 are male and 413,000 female with a little over 603,000 in the 25-44 age range. Union membership in the province is among the lowest in the Netherlands.

Multilingual capability has been a Dutch trait for many years. Over the years, foreign investors have found this to be less of a barrier than in other European locations and as a consequence, the local workforce has developed extensive experience at coming to terms with foreign company culture. Around three-quarters of the residents of Brabant speak a foreign language in addition to their mother tongue. Around 50 per cent of them can speak two foreign languages and one in every ten speaks three languages.

North-Brabant has two universities providing scientific research and teaching: the Tilburg University and the Technical University in Eindhoven, together facilitating a pool of 18,000 students. In addition, there are seven UPEs (Universities of Professional Education) and a large number of intermediate vocational schools, distributed across the province. These institutions provide professional education in a wide range of areas, including economics, management, technology, accountancy, chemistry, agriculture, health care, and art. In addition to this, there is a network of R&D institutions. These include the industry section of the Netherlands Institution for Applied Scientific Research the Dutch Polymer Institute and the Twinning Center. The institutions help to meet the needs of companies in the ICT, electronics, life sciences, multimedia, and automotive sectors.

In addition to the requirements of companies involved in R&D, there are seven universities for professional education throughout the province. Vocational training courses offered include economics, management, technology, accountancy, chemistry, agriculture, healthcare and art.

R&D and innovation

Overall, North Brabant can be classified as a high-tech region[3]. In the Regional Innovation Monitor of the European Commission (DG Enterprise, see http://www.rim-europa.eu) the province is described in terms of R&D and innovation. Typical for North Brabant is the very high innovation performance in terms of the number of EPO patents per million inhabitants, which is with almost 700, about 6 times the EU average and more than 3 times the national average. The research lab of Philips in Eindhoven is mainly responsible for this high number of patents, as well as for the high business R&D expenditures. As share of GDP, business R&D expenditures are at 2.53 % in 2007 which is more than double the 0.97 % share for the Netherlands as a whole, and the 1.2 % for the EU27. In 2000 the business R&D intensity in North Brabant was the same as in 2007 (which was also true for the EU27), while for the Netherlands as a whole it has decreased from 1.07 to 0.97% of GDP.

On the other hand, the share of public R&D expenditures in GDP is relatively low in North Brabant: 0.07 % for government research expenditures and 0.27 % for research expenditures at universities. This is way below both the national and EU public research intensity. For the Netherlands as a whole, government research expenditures were at 0.22 % of GDP and in the west of the country this is even 0.30 %. Higher education research expenditures at national level are at 0,52 % of GDP. One of the reasons for the relatively low public research intensity of North Brabant compared to the Randstad regions in the west of the country is the fact that the two universities in Brabant are relatively young and small compared to those in the West of the Netherlands. The national government research labs are also historically concentrated in the west of the Netherlands and this public R&D distribution pattern did not change after 2000.

2.2 SME profiling in the region

2.2.1 SME situation in the region

As in almost all European regions SMEs dominate the economic landscape in number of firms. Almost 94% of the enterprise population is made up by micro-firms with less than 10 employees. Small and medium-sized firms represent about 6% of the enterprise population and according to data from the Chamber of Commerce there only a few large enterprise employing more than 250 employees.

	Micro (1-9)	Small (10-49)	Medium-sized (50-249)	Large (250 or more)	All firms
Total – all sectors	184,618 (93.8%)	10,496 (5.3%)	1,467 (0.7%)	68 (0.0%)	196,747

Source: Own calculations based on data from Netherlands Chamber of Commerce.

2.2.2 SMEs in traditional sectors

[3] See for instance: Dunnewijk, T., H. Hollanders and R. Wintjes (2008), "Benchmarking Regions in the Enlarged Europe: Diversity in Knowledge Potential and Policy Options". In C. Nauwelaers and R. Wintjes (eds.), Innovation Policy in Europe, Edward Elgar: Cheltenham, pp. 53-106.

The definition of the sectors is based on Statistical Classification of Economic Activities in the European Community, Rev. 1.1 (2002) (NACE Rev. 1.1) and Statistical Classification of Economic Activities in the European Community, Rev. 2 (2007) (NACE Rev. 2).

	NACE Rev. 1.1	NACE Rev. 2	Covered in this report
Leather	19	15	√
Ceramics	26.2 + 26.3	23.3 + 23.4	--
Textiles	17+18	13+14	√
Basic metals and fabricated metal products (Mechanical/metallurgy)	27+28	24+25	√
Automotive	34	29	√
Food products and beverages	15	10+11	√

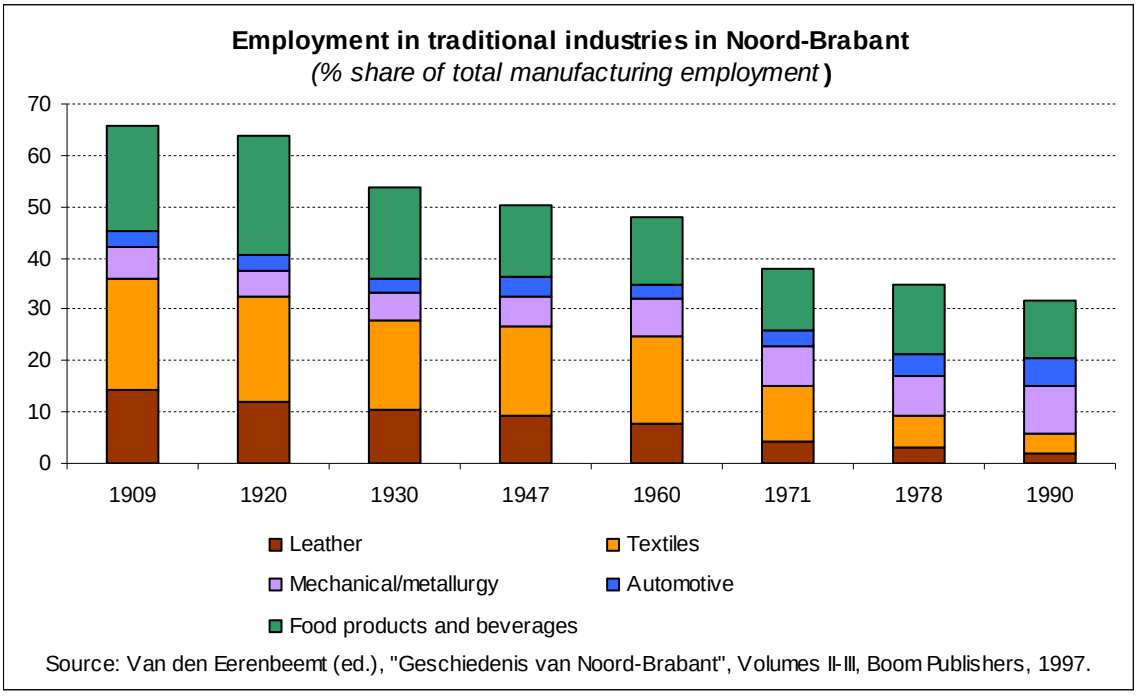
The ceramics sector is not covered for North Brabant, because it has never been a main sector in the regional economy. Defining which sectors are traditional is not an easy task and there are no generally accepted definitions that can be applied throughout history. The main characteristic is that all the five sectors covered for North Brabant are long established, that is: before 1900.

Traditional manufacturing sectors in North Brabant: traditional characteristics matrix

Sector and SIC (2003) **Main traditional sector characteristics***	**Leather**	**Textiles**	**Metal products/ Mechanical engineering**	**Automotive**	**Food**
Long established	yes	yes	yes	yes	yes
Main source of employment (at least in certain sub-regions, and/or in certain time in history)	Yes, till 1960's	Yes, till 1960's	Important source	Important source	Yes, important source
Mature and declining (in certain time in history)	Yes, declining since 1920	Yes, decline since 1909	Mature, but stable	Yes, but rather stable	Yes, decline from 1920-1960
Labour intensive (relative to the average for manufacturing industry in the region)	yes	yes	Yes	Yes	yes
Main source of wealth creation (at least in certain sub-regions and/or in certain time in history)	Yes, in the past	Yes, in the past	Not main, but Important	Not main, but Important	yes
Innovation capacity	yes	yes	yes	yes	Yes
Capacity to diversify into new, high-growth activities	yes	yes	Yes	Yes	yes
Export-led contribution (at least in certain sub-regions, and/or in certain time in	minor	minor	Not directly, mostly local	Mixed	Mixed

history)			suppliers		
Cluster location (relevant for at least significant industries within the sector; at least in certain sub-regions, and/or in certain time in history)	Yes, in the past	Yes, in the past	Yes	Yes	yes

* For some of these characteristics there are only qualitative indications



Traditional industries and in particular the textiles and leather industry have been important industries in North Brabant. Historical data show that employment in textiles and leather made up more than 1/3 of industrial employment in the beginning of the 20th century. But the employment share of these two industries has been falling ever since, in particular after the 2nd World War to a share of about 6% near the end of the 20th century. Also the employment share of food products has been declining in particular from the 1960s onwards. All 5 traditional industries accounted for almost 2/3 of industrial employment in 1909 but to less than 1/3 of industrial employment in 1990. Only for the automotive and mechanical & metallurgy industries employment shares have been increasing. Overall, employment in manufacturing industries has been declining.

Using more recent data from Eurostat we observe that most people are employed in the mechanical & metallurgy and food industries. The average size of a firm in textiles is small with about 8 employees, much less than the 55 employees for the average firm in automotive.

Table: All firms (SMEs and large firms)

	Number of local units	Number of persons employed	Average size
Leather (15)	110	1,252	11.4
Textiles (13+14)	535	4,513	8.4

Mechanical/metallurgy (24+25)	1,860	23,990	12.9
Automotive (29)	155	8610	55.5
Food products and beverages (10+11)	1050	26,917	25.6
Total manufacturing	9,535	172,122	18.1

Source: Own calculations based on Eurostat data.

Chamber of Commerce data show that most SMEs in traditional industries in Northern Brabant are micro-firms. More than 77% of the enterprise population is made up by micro-firms with less than 10 employees. Small and medium-sized firms represent about 18% respectively 4%% of the enterprise population. Only a few firms employ more than 250 employees of which none in the leather industry.

Table: SMEs in traditional industries

	Micro (1-9)	Small (10-49)	Medium-sized (50-249)	Large (250 or more)	All firms
Leather (15)	149	30	5	0	184
Textiles (13+14)	632	58	14	3	707
Mechanical/metallurgy (24+25)	1,916	419	67	6	2,408
Automotive (29)	144	35	12	4	195
Food products and beverages (10+11)	551	263	63	9	886
Total – all industries	3,392 (77.4%)	805 (18.4%)	161 (3.7%)	22 (0.5%)	4,380

Source: Own calculations based on data from Netherlands Chamber of Commerce.

Since there is no commonly agreed definition of what 'traditional sectors' are, a number of characteristics and criteria are used to describe and select appropriate sectors in the chosen region. For North Brabant 5 of the 6 sectors addressed in this project, more or less meet the criteria, although an important addition had to be made sometimes by referring to the past, e.g. Leather and Textiles have once been main sources of employment and wealth for North Brabant, especially in certain sub-regions, but not anymore.

Table: Traditional manufacturing sectors in North Brabant: traditional characteristics matrix

Sector and SIC (2003) **Main traditional sector characteristics***	**Leather**	**Textiles**	**Metal products/ Mechanical engineering**	**Automotive**	**Food**
Long established	yes	yes	yes	yes	yes
Main source of employment (at least in certain sub-regions, and/or in certain time in history)	Yes, till 1960's	Yes, till 1960's	Important source	Important source	Yes, important source
Mature and declining (in certain time in history)	Yes, declining since 1920	Yes, decline since 1909	Mature, but stable	Yes, but rather stable	Yes, decline from 1920-1960
Labour intensive (relative to	yes	yes	Yes	Yes	yes

Sector and SIC (2003) **Main traditional sector characteristics***	**Leather**	**Textiles**	**Metal products/ Mechanical engineering**	**Automotive**	**Food**
the average for manufacturing industry in the region)					
Main source of wealth creation (at least in certain sub-regions and/or in certain time in history)	Yes, in the past	Yes, in the past	Not main, but Important	Not main, but Important	yes
Innovation capacity	yes	yes	yes	yes	Yes
Capacity to diversify into new, high-growth activities	yes	yes	Yes	Yes	yes
Export-led contribution (at least in certain sub-regions, and/or in certain time in history)	minor	minor	Not directly, mostly local suppliers	Mixed	Mixed
Cluster location (relevant for at least significant industries within the sector; at least in certain sub-regions, and/or in certain time in history)	Yes, in the past	Yes, in the past	Yes	Yes	yes

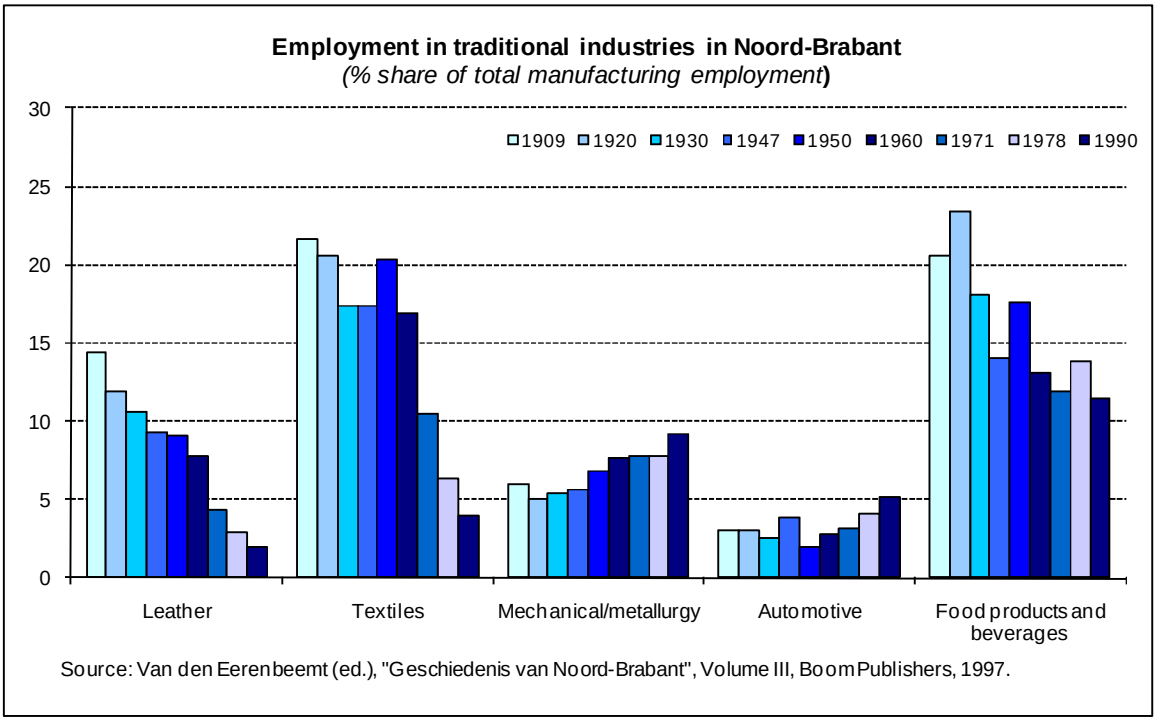
* For some of these characteristics there are only qualitative indications

In the next paragraphs each of these traditional sectors in North Brabant will be described. For Leather and Textiles this description is most of all a historical overview of decline.

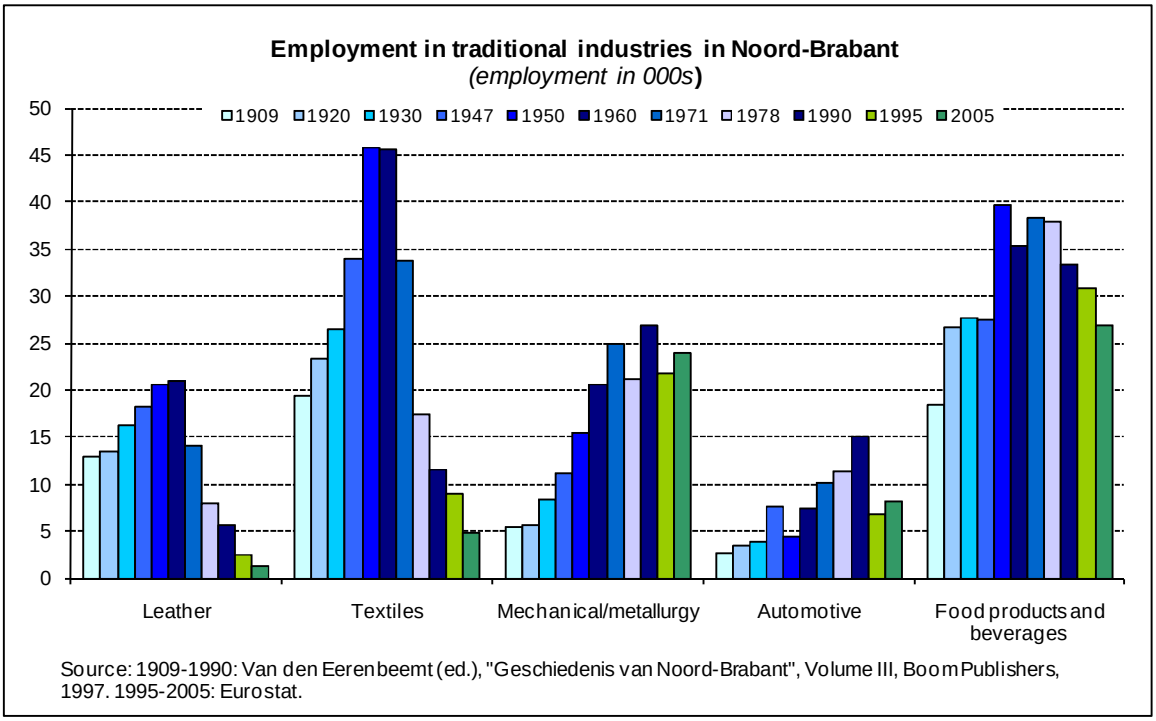
Leather

In 1909 about 15 percent of the manufacturing employment in the Province North Brabant was in the leather industry, mainly in shoemaking. The long stretched 'Langstraat' was the sub-regional area ranging from Vlijmen to Waalwijk and Raamsdonksveer where a large cluster type concentration of shoemaking dated back to good conditions for leather production (availability of water). The share of the Leather industry in total manufacturing employment has started to decrease already after 1909, but in terms of absolute numbers of people employed there had been an increase till 1960. During the 1960's there has been a sharp decrease, both in absolute terms as well as in terms of the share of the sector in total manufacturing. With the opening-up of national markets within the European Union the Dutch Leather industry could no longer compete with first Italian and later Spanish and Portuguese shoe industries, and more recently Asian manufacturers. Currently, the share of Leather in the economic structure is hardly 1 percent, as only a few companies in North Brabant are still engaged in shoe-manufacturing. In 1960 there were 227 shoe manufacturing companies in the region, but in 2001 there were about 20 manufacturing companies. Companies that have specialised in shoes for children, military, or with a focus on safety or health were among the remaining. Nowadays, the most visible remainders are perhaps the retail and wholesale activities, since Waalwijk is one of the largest concentrations of shoe-wholesale companies in Europe. As a result of the decrease in the shoe industry, the

companies in North Brabant which are still active in producing leather products are active in very different activities.



Source: Van den Eerenbeemt (ed.), "Geschiedenis van Noord-Brabant", Volume III, Boom Publishers, 1997.



Source: 1909-1990: Van den Eerenbeemt (ed.), "Geschiedenis van Noord-Brabant", Volume III, Boom Publishers, 1997. 1995-2005: Eurostat.

Textiles

The textile sector was in 1900 one of the main sectors of the economy in North Brabant with more than 20 percent of manufacturing employment, and in absolute number of people it had been growing till the 1950's up to almost 46,000 employees. During the 1960's and 70's

employment dropped sharply as manufacturing shifted to locations with cheaper labour costs. Again most of the remaining companies have specialised in niche markets and there no longer exists a cluster type of distribution of textile manufacturing in the region, while in the past it was highly concentrated in geographical sense (mainly in Tilburg, but also Helmond and Eindhoven) and specialised in certain type of products. The city of Tilburg was specialised in manufacturing of wool substances. Most of these companies had closed before the 1980's (see table below). Companies such as Vlisco in Helmond and Innofa in Tilburg show that textile is still a vital part of the province.

Selection of textile manufacturers in Tilburg	**year of opening and closing**
• Wollenstoffenfabriek gebr. Diepen B.V.	1808-1974
• AaBe (blankets and later textile for airplane-seats)	1810-2008
• Pollet, lakenfabrikant,	1816-1817
• N.V. Spinnerij Pieter van Dooren,	1827-1968
• Wollenstoffenfabriek De Beer-Brouwers & Co,	1834-1850
• Wollenstoffenfabriek Van den Bergh & Krabbendam (Beka),	1844-1972
• J. Brouwers lakenfabrieken N.V.,	1850-1995
• Wollenstoffenfabriek J. de Beer & Zn,	1850-1887
• N.V. G. Bogaers en Zoon Wollenstoffenfabriek,	1861-1927
• Wollenstoffenfabriek W. Brands en Zn N.V.,	1861-1873
• Wollenstoffenfabriek A & N Mutsaerts,	1849-1977
• C. Mommers & Co,	1865-1993
• N.V. wollenstoffenfabriek Janssens de Horion,	1868-1974
• Wollenstoffenfabriek van Dooren en Dams,	1870-1970
• Vellenbloterij, wolwasserij en wolhandel Bernard Pessers N.V.,	1885-1945
• Janssens van Buren's wollenstoffenfabrieken,	1885-1969
• Textiel Ververij Regenboog,	1890-1977
• N.V. Textielfabriek Verschuuren-Piron, wollenstoffenfabriek,	1891-1989
• Firma Otto Höhner, vilt-, lederwaren- en confectiebedrijf,	1893-1918
• Firma A. Franken & Zn. te Tilburg, wollenstoffenfabriek,	1895-1967
• Thomas de Beer Wollenstoffenfabrieken,	1903-1964
• N.V. Tilburgsche Wolwasserij,	1905-1946
• Twernerij en ververij "Broekhoven N.V.",	1908-1978
• Dekkledenfabriek G. Bogaers Smit,	1911-1916
• Textielververijen "De Koningshoeven N.V."	1918-1985
• Matrassenfabriek A.B.Z,	1927-1985
• N.V. Wollenstoffenfabriek Litex te Tilburg,	1934-1973
• Nederlandse Linnengarentwennerij N.V. Tiltwern,	1937-1944
• Textielweverij Mutsaers & van Poppel,	1950-1970
• Brabantse Tricotagefabriek,	1958-1977

Mechanical/metallurgy

The Mechanical/metallurgy sector in North Brabant was a small sector around 1900 with about 5 percent of total employment, but this increased over the years to almost 10% of manufacturing employment in the early 1990's and almost 13 percent in 2005. In absolute terms the number of jobs started to decrease after 1990. The concentration and cluster-type development for this sector was less evident that in Leather and Textiles. One of the reasons why this sector did not suffer from similar decreasing trends was the larger degree of diversification of products. Recent growth in employment is partly due to growth of companies that supply to large international automotive (E.g. DAF) and machinery and tool industries, for instance ASML (a manufacturer of machinery for chip-production).

A group of 30 companies in this sector in the Eindhoven region have established a regional branche-organisation: 'Metaalhuis'. Members of this network also include companies engaged in manufacturing of machines, tools and parts and components for mechatronics. Because statistical data on this sector at regional level is not available we mention an example:

Eaton Industries B.V. was founded in 1980 as a small machinery plant named Hydrowa. More and more the core business of this plant shifted from manufacturing machine parts to the production of hydraulic cylinders. Eaton Inc. (Cleveland, US) has about 75.000 employees worldwide and acquired Hydrowa in 2000. The company in Eindhoven has 105 employees. Eaton Industries B.V. main operation is the production of special custom build hydraulic cylinders. To support customers needs, the repair and service unit initiates repair and service activities on (own and competitors) cylinders. Their core business implies engineering-to-order, we tailor our products to customer needs and wishes. Most batch sizes vary somewhere between 1 and 25 pieces, with an average batch size of approximately 3 pieces.

Automotive

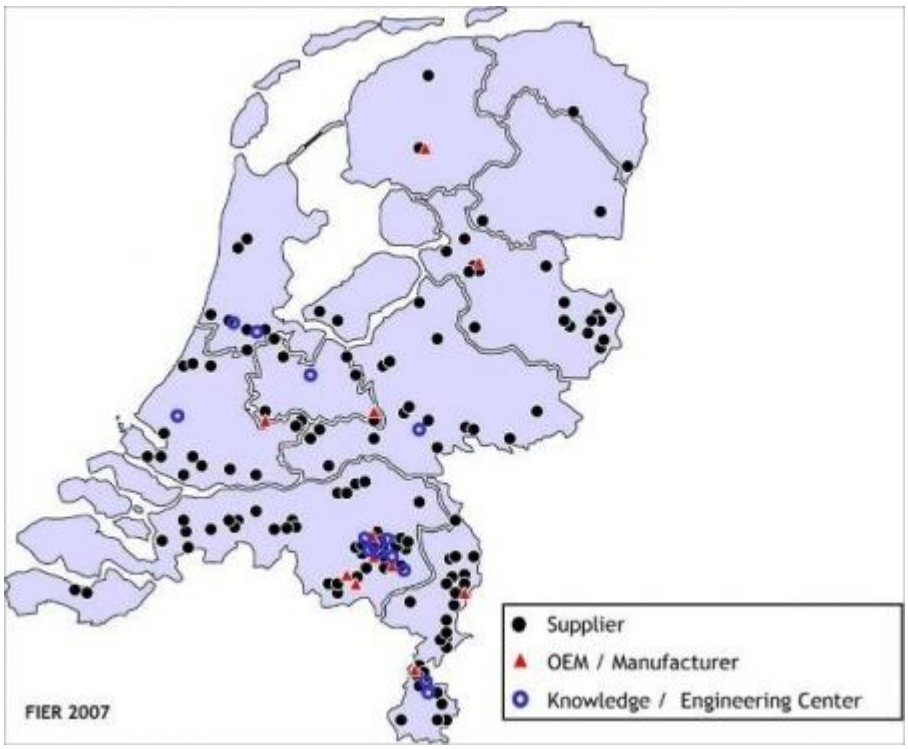
The automotive sector has never been a major source of employment for the province as a whole, but after 1960 employment has increased and in 1990 it has grown to a share of 5 percent of total manufacturing employment. Employment was concentrated in the Eindhoven region where it is still an important sector. The sector has also succeeded to get a rather good position on the innovation agenda of regional policy makers.

According to Fier[4] the Dutch automotive industry has grown considerably in recent years and now has over 40,000 jobs. Much of the industry is concentrated in North Brabant, with 8,200 jobs in 2005 according to Eurostat. North Brabant is the seat of international companies (or subsidiaries of these large companies) such as DAF Trucks, VDL Group, Nedschroef, Nedcar, Philips Car Lighting and top research and teaching as the Technical University Eindhoven, TNO Automotive, PDE Automotive and TTAI (TÜV Rheinland TNO Automotive International).

The automotive center in the Netherlands is the High Tech Automotive Campus (HTACampus) in Helmond. HTACampus brings together automotive companies, research institutions and education. Knowledge sharing and innovation are the goal, and specifically in the areas of automotive technology and clean and sustainable mobility solutions. End of 2009 construction has started building a 6000 m2 Automotive Facilities center with workshops, laboratories, offices and unique test facilities. The HTACampus therefore has the ability to become an international hotspot for automotive innovation.

[4] FIER is a Dutch consultancy firm for the automotive industry (including retail manufacturing)

The map below shows the regional distribution of the automotive industry show, with "many dots close to each other" in North-Brabant (Source: Automotive Fier, 2007).



Food products

Since 1920 the food sector has decreased in terms of its share in total manufacturing employment in North Brabant from 23 % in 1920 to 12 % in 1990. Data from Eurostat for the years after 1990 point to a slightly higher recent share of 17% in 1995 and 15 % for 2005.

One of the historical clusters in food manufacturing in North Brabant is the sugarproducts industry in West (North-)Brabant which is based on the production of beet sugar. In 1919 some 30 small beet sugar factories established the CSM (Centrale Suiker Maatschappij) which in 2007 has been taken over by the Suikerunie. The existence of beetsugar production has played a major role in the industrialisation of the cities of Breda and Roosendaal, where before 1900 many sugarproduct manufacturers started production. In 1858 the first mechanical production of peppermint in the Netherlands took place in Breda. One of the well known companies was 'Kwatta' which stopped production in 1970. Current sugar products manufacturers are for instance: Lonka, Leaf, Hooijmeyer, Venco and Penotti in Roosendael and Perfetti Van Melle in Breda.

Nowadays, Southeast Netherlands (which also includes the province of Limburg) is the third exporting regions of the Netherlands in food production and processing. The current added value of the food sector lies in the fact that it overlaps with technology areas such as high-tech systems and Lifetec. In addition to large manufacturers such as Campina, Bavaria, and Nutreco, there are hundreds of SMEs established in food business. They produce foods ranging from sweets, meat, dairy, beer and fruit to ingredients and "powders" for the food industry.

Two examples of innovative food producers are Ariza and Aquaculture. Organic fruit and vegetable business Ariza excels in sustainability. This pioneer in the market for organic fruit concentrate annually processes more than 60,000 tons of organic fruits and vegetables and delivers worldwide. Ariza takes responsibility for their own plantations and total supply chain management, monitored by independent authorities and a high-end safety system. Profits are invested in people and product development. The company continues to captivate its customers by constantly introducing new product ideas. Ariza strengthens the organic sector through participation in the public committee against fraud in the organic cultivation and sponsorship of the International Federation of Organic Agricultural Movements supporting worldwide organic farming and certification organizations.

Anova Seafood and Aqua Farming Fishion developed together with the University of Wageningen 'Claresse': the most sustainable fish in the Netherlands and unique in the fishing industry. Stocked fish offers a good alternative for overfished species and comes from a completely locked, very environmentally friendly and animal chain. The product is very interesting for farmers who wish to switch to farming. Claresse is now sold in the Netherlands, Belgium, Germany, Austria and Switzerland. Organisations like the World Wildlife Fund and the North Sea Foundation, welcomes the sustainable farmed fish.

Although food can be labelled as a traditional industry, it is one of the priority sectors of the national innovation strategy under the heading of ‘food and flowers’. Also regional policy makers are still convinced of the dynamic importance of this sector for the future of the economy of North Brabant.

2.3 SWOT Analysis

2.3.1 Strengths, Weaknesses, Opportunities and Threats

As the Regional Innovation Monitor of the European Commission explains North Brabant is already for a long time one of the most innovative regions in The Netherlands. This is to a large extent caused by the presence of Philips, the large (micro)electronics manufacturer, who started out as a producer of lamps. Philips had and has it's central research centre in Eindhoven.

The present policies in Brabant are still to a large extent influenced by Philips: Philips decided some 10 yeras ago to reduce the fundamental research and focus on core competences and transform from a technology-driven towards a market-driven innovation process. In order to obtain additional knowledge they proposed to open up their research campus and create a 'open innovation' high-tech campus for many other companies. The campus is now one of the innovation and research hot-spots in The Netherlands with many companies having at least some research there.

The campus is a centrepiece in the national and regional policy aiming at strengthening existing strengths.In Southeast Brabant these strengths High tech systems & materials, Food & nutrition and Life sciences & medical technology. For 2010 the budget to support this in the Peaks in the Delta programme is €9 mln. In Southwest Brabant the PiD themes are process industry (maintenance and bio-energy), logistics and tourism. For 2010 budget is €2.5 mln.

Policies at all levels related to the province are focused on these areas. The Agenda for Brabant is focusing on these (with e.g. attention for innovation in the area of energy (biomass (as part of the domain process industry) and solar PV (as part of high-tech systems and materials). The BOM is focusing it's attention on these sectors (e.g. World Class Maintenance: this national initiative that was co-initiated by the BOM links the capital intensive industries - aviation, energy, infrastructure, maritime and process - to the Maintenance, Repair and Overhaul (MRO) field. The World Class Maintenance Programme leads to an excellent performance in the terms of quality, availability, and trust against minimal lifecycle costs).

In order to maintain the high R&D expenditure in future regional policy is very much focused on increasing public R&D in the region by acquiring national research institutes.

Finally creative industries are considered important: Eindhoven has a prestigious design academy, and Philips is also more and more using design as a distinguishing feature.

RTDI governance in the Netherlands is multi-level, with the national level being most important. Here the largest budgets are spent and most decisions on (semi-) public research institutes are made. Within national RTDI policy there is a regional component that since 2006 is focused on turning existing regional strengths into economic 'peaks' of worldwide recognition (Peaks in the Delta, PiD, M€216 for 2006-2010). Regional governments add to the national budget, so that relatively large funds become available for regional RTDI programmes. Brabant is (together with the province of Limburg and the Brainport region) part of the PiD region 'Southeast', while West Brabant is participating in PiD region 'Southwest'.

Provinces receive funding from national authorities (and EC funds) but generate no direct tax-income. The main role of provinces is organization of spatial development (in economic domain e.g. development of industrial estates). Provinces have no formal role in industrial, research, or higher education policy. However, they are a player in the Dutch consensus oriented consultative culture and provinces see their limited role as instrumental for broader regional goals.

Activities of the Province with a finance component (investment promotion, innovation support, financial participation and restructuring of industrial estates) are outsourced to the BOM (Brabant Development Company). Turnover of the BOM in 2009 was €2.8 mln, with a loss of €1.7 mln; balance sheet total was €48.8 mln). Generic innovation support to SMEs is, as elsewhere in the Netherlands, given by Syntens, which in Brabant is located in Eindhoven and Breda.

At regional level the cities and municipalities around Eindhoven in southeast Brabant cooperate in the SRE (Cooperation relationship Eindhoven Region) in order to improve their operation at supramunicipal level. The region is called 'Brainport'. Brainport Development is the regional government agency stimulating regional economic activities.

One of the policy measures specifically addressing innovation in SME's is the 'Innovation Officer' scheme. It is one of the instruments financed under the (EU Structural Funds) Operational Programme Zuid. Together with the SME's the advisors of Syntens make an innovation plan and then an appropriate high-educated graduate is hired as 'Innovation officer' to implement the innovation project. This policy measure aims at stimulating innovation in SMEs by overcoming their lack of time and qualified personnel. Evaluation

results[5] show that innovation officers influence a large number of topics, enhance actual innovation outcomes, and assist in overcoming the time bottleneck of SMEs. Their roles are highly diverse, but often emphasize the importance of external contacts for innovation.

The mission of the N.V. Noord-Brabant Development Agency (BOM) is to create, improve, maintain and develop the industrial structure in Noord-Brabant by offering a range of professional services. The BOM was established in 1983 and is funded and financed by the Dutch State and the Province of Noord-Brabant. Noord-Brabant is a region in the south of the Netherlands. One of the activities of the BOM is providing venture capital. The BOM Venture Capital Department finances innovative and financially healthy companies by providing equity capital and subordinated loans of up to 1,8 million Euros.

The BOM has a programme which formerly was called 'Process IT' and which now has been renamed: 'Food and chemicals'. Within the framework of such programmes various activities are organised. Another relevant topic for the BOM is automotive, which has received specific attention over the years.

2.3.2 FINAL CONSIDERATIONS

According to Murk Peutz of Syntens, current public innovation stimulating activities often fail to activate a significant group of SMEs. To enhance the innovation in the regio, Syntens initiated the programme "ToekomstBedrijven" in cooperation with Regional evelopment Agencies and the Chamber of Commerce. The objective is to involve 2000 non-participating SMEs in innovation networks over the course of four years (2008-2012). Syntens targets a "middle-group" of SMEs, less systematic in innovation practices than pro-active innovators, but still capable and willing to innovate. Syntens continuously monitors results. A large-scale quantitative study is conducted by research centre EIM to evaluate the effects of "ToekomstBedrijven" on behaviour of SMEs. The programme appears to be unique in its tailored approach of targeting SMEs on such a large scale. Results show SMEs often are willing and capable of innovation. They already started numerous follow-up activities to improve their innovative efforts.

Based on the survey, and interviews with SME's and policy organisations, analysis of impact and of good practice features of innovation policy instruments in North Brabant will follow.

[5] "Enhancing innovation in Small and Medium-sized Enterprises through short-term placement of Innovation Officers" (M. Peutz and R. Stultiëns, 2010), Paper presented at ISPIM conference.